



ON DYSENTERY,

A THESIS WRITTEN BY

ARTHUR DUPUY, M.R.C.S.L.,

(OF MAURITIUS,)

FOR THE DEGREE OF M.D. OF THE UNIVERSITY OF EDINBURGH.

— Miseris succurrere disco.—VIRGIL.

EDINBURGH : MDCCCLIII.

EDINBURGH : PRINTED BY ALEX. ELDER, HIGH STREET.

ON DYSENTERY.

~~~~~  
"In hoc enim corporis affectu, aliquod certe in medicinâ opus est, haud multum in Naturæ beneficio."—SIR G. BAKER.  
~~~~~

OF all the diseases which attack the human frame, none perhaps possesses more importance and interest to the Indian practitioner, than Dysentery.

The melancholy importance which it enjoys, it derives from its formidable nature, the complex features which it sometimes exhibits; its, as yet, obscure pathology, and the variety of modes of treatment which have been put forth to be highly extolled and blindly adopted by some, and as obstinately rejected by others.

In considering this affection, it must ever be borne in mind that, as seen in the Tropics, it is a much more serious and fatal disease than that which is commonly met with in Europe. Thus Mr Twining says:—"Dysentery may be generally looked on as a severe disease in India. In any given class of people, it is a much more rapid and fatal disease, than what we designate by the same name in England."

Dr Watson says:—"Dysentery is one of the pests of hot climates." And Dr Parkes, one of the latest writers on the subject, observes:—"Dysentery is probably *the most common* disease in India, and undoubtedly it is *the most important*, on account of its numerous alliances, and of the gravity of its consequences. Indeed, when Dysentery is epidemic in tropical countries, it produces as much havoc as Asiatic Cholera. Hence, it behoves every one who is likely to encounter this fearful foe, to make himself as perfectly acquainted as possible with the circumstances which call it into existence, with its nature and progress, in order to oppose it effectually and guard against its ravages.

The subject of Dysentery presents many difficult points to elucidate; viz. its *nature*, its *pathology*, its *relation to Hepatitis, or the other diseases* with which it is not unfrequently complicated, the real value of *mercurials* in its treatment, &c. In order to be able to effect this, I shall take the liberty of meeting my subject in a different way from that usually adopted. Thus I shall first enumerate the different views which have been held concerning the nature of this complaint, by the most eminent authorities; and, secondly, describe the anatomical characters of it which are observed on death, to show whether they corroborate or discard those views. The first question that arises is to decide what relation Dysentery bears to Inflammation? and here we have a variety of opinions broached on the subject.

Twining and R. W. Bampffield state that it is a simple inflammation of the general mucous tract of the large intestine; and Dr Watson seems to share in this statement, by writing:—
“Dysentery consists essentially in inflammation of the mucous membrane of the large intestines.”

Andral says that inflammation is present especially in the large intestine.* Others say that Dysentery is an inflammation combined with spasms, as Croup, and in its advanced stage tending to ulceration. A third set of authors believe that Dysentery may exist without inflammation; but that the latter may co-exist with, or follow closely upon it. Thus Mr Annesley says:—
“The inflammation of the mucous coat of the large bowels in some cases is coeval with the dysenteric symptoms, or supervenes rapidly on them.” (Quoted by Dr Parkes.) We find others who assert that inflammation has no connection with the production of the disease, and that it is the exception to the rule, when this is observed. Thus Dr James Johnson regards inflammation rather as a sequence than a cause of Dysentery; as a contingent effect, and not as a uniform result.”

There are practitioners who look upon Dysentery as an ulcerative disease, and set aside the idea of inflammation as causing it. Others, again, consider it as closely allied to enteritis; or as a stricture in the colon or the small intestines; or as Hepatitis disguised; and, lastly, Sydenham regards Dysentery as a fever turned in upon the intestines.

* Pathologie Interne, Art. Dysenterie, vol. I.

This enumeration of conflicting opinions will show one thing, viz., how undecided the nature of Dysentery has been to this time. Hence arose, I conceive, the difference in the treatment recommended by the various observers of this disease. The cause of all this, I think, to be the following. They did not endeavour to trace the earliest changes wrought in the body by the disease; or, if they did so, they either failed in their attempt, or overlooked the importance of what they saw. Twining, indeed, and Copland, mention the fact that the large intestines are inflamed and ulcerated; but they do not state what was the primary alteration in their condition leading to that amount of disorganization which they describe. This is an important point, however, in the history of Dysentery, as we shall presently see.

ANATOMICAL CHARACTERS.

Of acute and chronic simple Dysentery,—Dr Watson says:—“Inspection of the dead body discloses more or less *ulceration*, chiefly of the large intestine. The glands that lie scattered over its surface are large and prominent, looking somewhat like small-pox pustules, for which indeed they have been mistaken. They probably form the *foci* of most of the ulcers,” &c.

According to Mr Twining, inflammation, ulceration, and sometimes sloughing, or mortification of the mucous membrane, or of the inner coats of the large intestine, are to be met with on examination after death, particularly in the cœcum, colon, and rectum. The omentum, mesentery, and mesocolon, are also more vascular; and the glands of the latter two are enlarged, inflamed, and sometimes (though seldom) suppurating, especially if the part of the intestine corresponding to them contains ulcers. The ulcers are most common in the cœcum and ascending colon, and in the sigmoid flexure; but sometimes they are distributed over the whole mucous tract of the large intestine. Mr Twining states that he has found the last three or four inches of the small intestines covered with superficial roughness and ulceration; and observes, that it is only in cases of *protracted fevers* that *ulceration* of the *small intestines* exists. But Dr Parkes, who dissected carefully *fifty* cases of acute Dysentery, and *twenty-four* of hepatic abscess, “in the majority of which Dysentery was present,” tells us, that “in *all* cases of *simple* Dysentery the alterations in the canal are circumscribed by the ilio-colic valve;” and this, I think, is important to recollect.

Andral merely states that *ulcerations* may be found in the large intestine, especially in the epidemic form of the disease. ("On peut y trouver des ulcérations surtout dans les Dysenteries épidémiques.")

After having shown how loose the statements concerning the morbid alterations produced by Dysentery in the large intestine had been to this time, I shall endeavour to describe them after Dr Parkes, who paid great attention to this disease, during his residence in India. But before I go further, I may perhaps be allowed to quote a passage from Dr Sharpey,* in order to contrast more strongly the sound with the morbid state. He says: "There are scattered over the surface of the whole large intestine numerous rounded, whitish, glandular bodies, about one-third or one-half of a line in diameter, and therefore much larger than the tubuli. These are follicular recesses, or crypts very simple in structure. Their *orifice* is narrowed, but it leads into a dilated cavity, having their walls closely surrounded by the small perpendicular tubuli. They are *most abundant* in the *cæcum*, and in its vermiform appendix." "But Dr Baly has shown that they have *not always a permanent opening*, but are *sometimes closed*, resembling in this respect the solitary glands of the small intestine."†

It will be seen, in the course of these pages, what an important part these glands play in Dysentery; and almost every practitioner seemed to have overlooked the importance of the changes occurring in them, until Dr Parkes drew the attention of the profession to them more particularly, and proved that *in them* originate the morbid alterations observed in Dysentery in the immense majority of cases. They have been noticed, he says, in Dysentery, by various observers; but most of these writers appear, however, to have regarded their existence as incidental, and not to have proclaimed their *relation to dysenteric ulceration* with sufficient accuracy and distinctness. The same author says, "When enlarged, they have some resemblance to the solitary glands of the small intestines."

Ballingall and Twining mistook them, when inflamed, for pustules, and Murray calls them vesicles or pustules. Dr Parkes states, that Dysentery, in its uncomplicated form, attacks the

* Elements of Anat. and Physiology; Struct. of Muc. Memb. of L. Intest., vol. iii. p. 1044.

† Kirke's Hand-book of Physiology, p. 232.

large intestine only, and that the other portions of the alimentary canal are always free from any trace of disease. Furthermore, he says that the *solitary glands are the foci, and, in almost all cases, the primary centres of ulceration*, under those circumstances.

First stage.—In what may be called the first stage of Dysentery, those small glands are found to be enlarged, rounded, and containing an opaque, thick, whitish substance, looking somewhat like flour and water; in fact, they are small prominent bodies. At an early period of the disease, no distinct orifice is generally seen; but sometimes, however, a black spot is to be met with in the centre, corresponding probably to it. The number and size of these bodies vary in different cases; they are more numerous in the cœcum and the ascending colon, but are also abundant in the sigmoid flexure and the rectum. After two or three days duration of the disease, a minute vascular ring, caused by enlarged blood-vessels, is discovered around the crypt, and gradually increases in diameter—the crypt, in the meantime, becoming notably hard and prominent.

Second stage.—This stage begins with ulceration of these glands; and the latter process may, in some cases, take place on the very first day; but, in general, it does not occur until the *third* day of the disease. Ulceration first attacks the apices of the crypts, then descends to their bases, and subsequently extends to the mucous surface around; but sometimes it may begin in the mucous membrane *intermediate* between the solitary follicles. Dr Parkes states that the latter is not the ordinary course of the ulceration; and that, when it occurs, *the crypts are also ulcerated* in connection with the intermediate and surrounding mucous membrane. He saw but *one* instance of this variety on dissection, and says: “They (solitary glands) were enlarged, round, and very hard to the touch, and around them the mucous membrane was ulcerated away for a distance of from one to two lines.” Ulceration may also begin in the *intermediate* mucous membrane of the large intestine. For this to occur, exudation matter is poured into the submucous cellular tissue, and causes the superjacent mucous membrane to soften, and ultimately ulcerate. And again, Dr Parkes states that it is his opinion that this is never seen unless ulceration is also present in the solitary glands. He says:—“The effused matter is white or yellowish, in points, or raising a piece

of membrane the size of a shilling, or even half-a-crown, this membrane is softened, and when rubbed off, an ulcer is left. I have never seen a gland on this raised membrane."

I must state, that when the inflammation is not intense or rapid, the solitary glands have time, as it were, to enlarge to their full extent, and are plump and well filled with their peculiar secretion. Then also the ulcerative process begins at the very apex of the enlarged crypt, and gradually extends to its base, and thence into the surrounding mucous membrane. In this case, too, the small ulcer formed has rounded and raised edges. But, on the contrary, when the inflammatory action progresses rapidly, and soon reaches the ulcerative stage, the solitary follicles become suddenly enlarged and prominent, cause pressure on, and ulceration of, the mucous membrane covering them, and discharge their contents at once; so that the spot which they occupied now exhibits an ulcer, with flat edges. This ulcer, too, has a tendency to spread more rapidly into the neighbouring texture. Once formed, an ulcer may assume different forms as it extends itself; it may be rounded, oblong, or irregular. If small and round, its edges are generally raised; but if it is irregular, its edges are flat. The floor of an ulcer may consist of the muscular fibres of the intestine, of its serous tunic, or of a false membrane. But the important point to keep in mind is, that the *intermediate* mucous membrane of the large intestine is (before ulceration extends into it from the glands), generally in a sound state, except in cases of scurvy, and gastro-enteritis complicating Dysentery, in which it is congested or inflamed. *In the immense majority of instances*, the disease first attacks the *solitary glands*.

It has been said that Dysentery may be of the sloughing character, gangrenous from the first, and not ulcerative. Dr. Parkes and Dr. Walshe, however, think that this form of the disease must be very rare; although occasional sloughing of portions of mucous membrane may occur. Besides, false membranes, resembling pieces of mucous membrane, may be mistaken for the latter, if the examination is made hastily.

If the case progresses towards cure, ulceration ceases, and attempts are immediately made by nature to repair the ravages caused by the disease. This constitutes *the third stage*.—Effusion of coagulable lymph takes place, and is deposited upon the ulcers, or between the different tunics of the intestine. This

exudation matter occurs in layers, nodules, or particles, as saw dust. Dr. Parkes states that it is not thrown out before ulceration has occurred; but Dr. Walshe is of opinion, that it is poured both upon the ulcerated and the non-ulcerated spots. The lymph is at first of a pale yellowish colour, and may remain smooth and fibrous during cicatrisation; or cicatrisation may occur by the puckering process, nodosities may be met with at the edges of the ulcers: in fact, as in simple chronic ulceration of the stomach. It has been stated "by Sebastian and some other German anatomists," says Dr. Parkes, that cicatrisation, in Dysentery, may re-produce mucous membrane; but although, after a lapse of time, the cicatrix may be undistinguishable with the naked eye from normal mucous membrane, yet the microscope might perhaps prove that it differs from the latter in its minute structure. Thus Dr. Sharpey says:* "The steps of the process have been examined with most care in the healing of ulcers of the large intestine, and in such cases, it has been found that the resulting cicatrix becomes *covered with epithelium, but that the tabular follicles are not re-produced.*" It is, in fact, what we should expect: thus in the analogue of mucous membrane, the skin, when a breach occurs, it is repaired by a *cicatrix*; i. e. a structure of lower organisation than itself, and consisting merely of fibro-cellular tissue, and having neither papillæ nor sweat-glands.

Cicatrisation may take place very rapidly in favorable cases: thus an ulcer which to-day is spreading and bleeding, may to-morrow be covered with lymph, and be considered cured, for it then pours out no blood. It may be asked in such cases, whether ulceration was really present? Dr. Parkes had an instance proving that it was present.

Fourth Stage.—But if the case does not proceed towards cure, instead of the cicatrisation of the ulcers, we have the following changes:—Lymph is invariably poured out after a few days, but cicatrisation does not take place, or not completely, and we have the chronic disease established. The exudation matter is thrown out in profuse quantity, either because the inflammation has been intense, or has not been vigorously combated, or lastly, from some unexplained cause. With this state of things, we may also

* Elem. of Anat. and Phys.—Regenerat. of muc. memb. vol. iii.

detect ulcers spreading beneath the exudation matter which occurs in masses of various shapes and sizes. The lymph at first yellowish, now changes to a dark, almost black colour, in some cases, and resembles somewhat the bark of a tree. Even at this period of the disease, the ulcers, it is said, may heal, so ready nature always is to resist morbid action; but then great thickening of the coats of the intestines continues, and irregular puckerings or nodosities are met with. In some cases, Mr. Twining states, the coats of the large intestine are so much thickened by deposition of lymph upon the ulcers and between their coats, that they do not collapse on being cut, and resemble a "a thick leathern tube." In other cases again, which he considers to have been more protracted, the large bowel is much reduced in size and like a chord; and its internal surface is covered with ulcers. The omentum, too, is occasionally inflamed and contracts adhesion with the neighbouring parts, as with the glands of the Mesentery and Meso-colon; and thus forms bands or loops which may strangle a portion of intestine and cause death. Sometimes it becomes adherent with the cœcum, and gives rise to an uneasy and dragging sensation in the right hypochondrium, when the patient stretches his body, or his stomach or his intestines are flatulent. These symptoms, then, may mislead one into the belief that the liver is diseased, and contains an abscess.

Occasionally the ulcerative process has made such extensive ravages, and the ensuing contraction has been so great, that constriction of the bowels has been produced, and has caused death, by giving rise to fatal obstruction. Lastly, sometimes, though very rarely, perforation has been produced and peritonitis resulted. The principal anatomical characters are, therefore, found in the large intestine; but, according to Dr. Walshe, the small intestine may also be affected in simple Dysentery. Some authors consider this state as a secondary affection, or a complication or as an extension of the same disease from the large bowel. I have already stated Dr. Parkes' opinion, that the morbid alterations are limited to the large intestine by the ilio-colic valve, in simple Dysentery. The mucous membrane of the stomach is not affected, if the Dysentery is simple; but in the scorbutic complication, it suffers, as well as that of the small intestines, especially of the ilium. The lining membrane presents various shades of inflammation, the solitary glands are enlarged and sometimes ulcer-

ated, and also a few of Peyer's patches, but more rarely. In England the latter do not seem to suffer in Dysentery.*

In Tropical Dysentery, it is very common to meet with hepatic abscess: according to Dr. Parkes' computation, *twenty-one per cent.* of patients labouring under Dysentery have abscess in the liver. This is not seen in England. The liver may be pale, bloodless, slightly granular, and of the natural size; or pale, bloodless, granular, and enlarged, dark, highly congested, hepatically and portally; or, lastly, it may be *natural*.

Bile.—This fluid is, generally speaking, moderate in quantity, thin, more or less transparent and reddish-brown, and may contain red particles like cayenne pepper; or it is dark, viscid, ropy.

The Pancreas is sometimes congested, reddish, and soft; or pale and bloodless, or natural. Dr Parkes states, that in chronic cases, it often exhibits more marked changes, and is indurated.

The Kidneys offer nothing remarkable.

The Bladder may be acutely inflamed in some cases. Dr. Parkes states:—"I have known the bladder acutely inflamed during and subsequent to Dysentery, and have dissected one case in which chronic Dysentery was at the end of the case complicated, and rendered fatal by intense inflammation of the bladder, producing general thickening of its coats, and ulceration and sloughing of the mucous membrane."

The Thoracic and Cerebral organs offer nothing remarkable in Dysentery. We, therefore, see that the morbid changes produced by Dysentery are characterised by inflammation and ulceration; that they are confined to the large bowels, in the simple form of the disease; and that, in the immense majority of cases, those alterations begin in the solitary glands of that portion of the intestinal canal. The Liver, Spleen, Pancreas, &c., may also be variously affected, as we have already detailed.

Nature of Dysentery.—We have now done with the consideration of the *post-mortem* changes produced by Dysentery, and are, I conceive, better enabled to frame an opinion touching its *nature*. From these alterations, I conclude:—

* It may be asked, whether, in those cases, typhoid fever did not really complicate the Dysentery? The answer is: if it is typhoid fever that caused the ulceration of the Peyer's patches, it must have attacked the individual before the Dysentery came on, for it never occurs in the course of an acute disease (Walshe) besides Indian practitioners do not mention typhoid fever as a complication of Dysentery.

I. That Dysentery is decidedly an *inflammation*; for we find on death its usual results, and some of which, such as exudation of coagulable lymph, *nothing else but inflammation* can produce.

II. That Dysentery is a *specific* inflammation, and its specific character is plainly manifested by the rapidity with which the inflammation runs on to ulceration; by the peculiar partorelement of the mucous membrane which is so uniformly and constantly attacked by the disease, and which, therefore, cannot be the result of accident or coincidence. For it may be asked, if Dysentery is a *simple* or common inflammation, how is it that such severe local alterations do not give rise to co-ordinate symptomatic fever? Every one knows what serious constitutional disturbance would be produced by the same amount of injury done to the skin (*ex. gr.* by burns or scalds), and the latter is perfectly analogous in structure to mucous membrane! Again, if the ulceration which is observed in Dysentery were the result of common inflammation, the former should always be in proportion to the intensity of the latter; but this does not hold good, and we often find it in “comparatively slight cases.” “Moreover, says Dr. Parkes, the same amount of inflammation exists every day in the stomach and duodenum without being followed by ulceration.”

Definition:—I would, therefore, define Dysentery to be an *inflammation of a specific character*, rapidly running on to ulceration, chiefly or almost entirely affecting, at the beginning, the solitary glands of the large intestine, in its uncomplicated form. These internal changes giving rise generally to pain, tenderness, or both, over the right or left iliac fossa, and along the course of the transverse colon, and to tormina, tenesmus, and frequent, scanty, bloody, mucous or glairy stools.

SYMPTOMS.

10. Of acute sthenic Dysentery:—They may be suddenly or gradually developed; in the former case, the character of the disease is established at once, blood appears in the stools, &c., &c.; in the latter case, the patient finds that his bowels are moved oftener than usual, and the stools are more copious and fluid. He next complains of uneasiness and griping pains in the course of the colon, and generally, at first, there is no tenderness on pressure in that region. At the same time, he experiences a sensation of bearing down at the anus, and makes more efforts to pass his stools. The latter are slimy or gelatinous, sometimes

somewhat of a feculent character still, and generally increased in number. As yet they contain no blood, for this appears in the evacuations only after ulceration has taken place in the bowels, (*i.e.* of what we have called the *second stage*) and this our description applies to the first stage of the disease. But in severe cases, as ulceration is present at a very early period, so we may likewise find blood in the stools sooner than usual. The blood may be met with in the form of streaks; or it may be mixed with the evacuation; or it may present itself in its pure state; and, lastly, it may be clotted. As the disease passes into the ulcerative stage, we find more and more blood in the evacuations; and the latter too, become scanty, mucous, lymphic, or shreddy; or the stools may be abundant, watery, muddy, sanious, like the washings of raw meat. Later on, "the stools present an appearance something like *pus*," according to Dr. Parkes; and Audral* says:—"Les evacuations tres douloureuses sont rougeâtres ou brunes, quelquefois *puriformes*."

When the stress of the disease falls upon the cœcum or the ascending colon, there are frequently an intumescence and tenderness at the right iliac fossa, and the stools are copious and bloody; and this has been called "Dysenteric Diarrhœa;" but when it falls upon the descending colon or rectum, these symptoms manifest themselves at the left iliac fossa, and the stools are mucous and bloody, and contain no fecal matter: sometimes even they consist of pure dark blood only. All authors seem to be agreed now that scybala are very rarely (if ever) seen in Tropical, as well as in European Dysentery. The essential character, then, of the stools observed in Dysentery, is to be scanty, mucous, or glairy, bloody, and attended by tormina and tenesmus. Tormina are pains of a griping character, felt in the course of the large intestines, and due to spasms of the bowel. They come and go, and are met with especially when the transverse colon is affected. They are probably caused by the irritation or inflammation propagated to the muscular coat of the bowel by the ulcers which are present in the mucous lining. Dr Parkes states, that tormina are sometimes absent; but he does not say whether, in that case, the inflammation also spares the muscular tunic of the colon. I conjecture that, in these instances, the mucous coat alone is inflamed or ulcerated, and the muscular is not

* Anatomie Pathologique—Dysenterie, vol. i.

touched. Dr Johnson and Mr Annesley write, that hardened faeces, if present, are arrested by these spasms of the bowel; but it has been stated above, that both in European and Tropical Dysentery, scybalæ are very rare; besides, Dr Parkes rejects this opinion.

Tenesmus consists in a sensation of spasm about the anus; and this is due to a spasm of the sphincter ani. It is met with especially when the rectum is affected, when there may even be prolapsus ani in young subjects. It is owing to the same cause as tormina; for Andral makes the following statement:—"Les ténésmes qui accompagnent la Dysenterie font présumer que la *membrane muqueuse* seule n'est pas altérée dans cette maladie, et que la membrane *musculeuse* doit participer à cette altération. L'anatomie pathologique a démontré, en effet, que cette membrane présente souvent des traces *d'inflammation*." But, like tormina, tenesmus may be absent; and this may be attributed to the stress of the disease falling upon the cæcum. If the rectum be severely affected, and be neglected, says Dr Parkes, "some portion of the mucous membrane speedily sloughs and protrudes from the anus. Except in this variety, the occurrence of sloughing and discharge of the mucous membrane is not common." Membranous exudations of fibrine may be mistaken for portions of sloughing mucous membrane.

With the above train of symptoms, generally, there are pain and tenderness, as already said, over the cæcum, or sigmoid flexure of the colon, or over the whole tract of the colon. These last two are more marked at the first two spots, because there the *solitary follicles are more abundant, and consequently the morbid changes occurring in them are more clearly and strongly manifested*. But both pain and tenderness may be absent at those spots even, although ulceration may be producing havoc internally. This may be owing to its having spared, or not yet reached the muscular coat; for it is well known that mucous membranes are little sensitive, even when inflamed; since, being lax, they yield to accommodate the results of the inflammation, and so escape the *pain* which is conceived to depend upon pressure on, or rigidity of, the inflamed texture. Hence, the nature of the stools, and not the pain or tenderness, should guide us in our treatment.

Sometimes the patient experiences a sensation of heat along

the transverse colon; and, it is said, this morbid feeling arises from an extension of the inflammation along the mucous coat of the intestine, or from the inflammation of its serous tunic, or of the mesenteric glands.

The urinary system participates somewhat in the disease. There is an uneasy sensation above the pubis, and pain is felt in the bladder. Micturition is frequent, difficult, and painful; the urine is scanty, reddish, brown, scalding, and its sp. gr. averages from 1015 to 1025. It decomposes rapidly, and becomes ammoniacal; but Dr Parkes states that it does not contain albumen. There may even be suppression of urine sometimes. These symptoms may arise from the irritation of the large intestines extending to the kidneys (for the ascending and descending divisions of the colon come into contact with both kidneys), or "to the lower portion of the intestine contiguous with the fundus and back of the bladder." (Twining.) In the female, the urethra is irritated, and becomes painful, either from sympathy, or the frequent passage of the stools.

The tongue, in sthenic cases, is furred and white, and at a later stage of the disease, it is generally brown and dry. The appetite, however, is not seriously impaired; and, in slight cases, it is natural; but thirst is commonly urgent. If gastro-enteritis be present, then you have nausea and vomitus; but these symptoms may be present in the *simple* disease; perhaps from the contiguity of the transverse colon to the stomach, and sympathy arising therefrom, or from reflex action. Dr. Parkes makes the following remark concerning them: "I have known vomiting of fæces in *three* instances in one year, and have seen a dark coffee-like, or black vomit, in two cases, which after death was found to have come from the *colon*." The pulse, if increased in frequency, is in proportion to the respiration; in sthenic cases, it is hard, but never *wiry*, according to Dr. Parkes. There is generally *no fever*, or when fever is present, it is not of a serious character, and there are no rigors, and no feeling of lassitude. The skin is dry and harsh, sometimes even furfuraceous, at an early period of the disease. Mr. Twining says:—"Notwithstanding this dreadful state of disease, there is often little or no pyrexia, the tongue does not show much sign of disorder, the pulse is frequently soft and compressible, the skin cool and perspiring freely; and pressure on the belly gives little uneasiness, &c."

When the calls to stool are very frequent, the patient's sleep is broken, and there is restlessness, anxiety, and great suffering ; and even the patient may call upon death to be released from them. Dr. James Johnson, who suffered a severe attack of Dysentery in India, bears witness to this statement in his book.

20. Of Acute Asthenic Dysentery, Dr. Parkes says:—" I have not mentioned the adynamic variety ; because this is almost always a case complicated with remittent fever, or with typhus. I have never seen adynamic symptoms apart from fever or cholera." But yet, as some authors maintain, it may be met with in uncomplicated Dysentery, as, for example, when the patient, on the seizure of the disease, is weakened from any cause, or when Dysentery is epidemic sometimes. I may be allowed to say a few words concerning this state.

The essential symptoms are nearly the same ; but the breath is foul, the tongue and teeth covered with black sordes, the skin is dusky, and below its usual temperature, the stools are reddish, brown, or black, more copious than in the sthenic form of the disease, and their foetor is extreme, and "like that of an anatomist's macerating tub;" the pulse is exceedingly frequent, and weak ; there is utter prostration of strength, great anxiety of countenance ; the features are shrunk at a very early period, and the patient is very despondent, even from the first. Next low and muttering delirium comes on, with subsultus tendinum and somnolence, which generally passes into coma and death.

The asthenic variety of Dysentery may kill the patient in thirty-six hours ; but it generally does so in from three to six days.

Terminations and duration of acute Dysentery.—This disease generally lasts from six to ten days and may terminate (10.) in recovery. This fortunate event may take place very rapidly, as in three or four days sometimes. We are then naturally led to ask whether, in such a case, ulceration was present in the large bowel? The answer is, it may be present. Dr. Parkes dissected a man who died of *coup-de-soleil*, and had a proof of this. But generally recovery takes place in from six to ten days, by the gradual subsidence of all the symptoms.

20. By death (*a*) resulting from nervous collapse from the first ; the skin being cool and the face livid ; or (*b*) after about a fortnight ; the stools going on unrestrained, the tenesmus increasing

in intensity, and the evacuations in number, until at last completely involuntary stools, with hiccup and cold extremities, come on and close the scene.

It is stated by some authors, that even at this unfavorable period of the disease, recovery may take place! or lastly, (c) death may result from perforation of the bowel and extravasation of its contents; thereby giving rise to fatal peritonitis; but this mode of death is rare in Dysentery.

III. An acute attack of Dysentery may lapse into the chronic state.

Causes of Dysentery.—They are said to be rapid alternations of very warm and cold temperatures, exposure to hot and moist *weather*, blood changes, putrid exhalations, the malarious poison, an “epidemic constitution” of the atmosphere, eating unripe or acid fruit, bad wine, cider, and water, acrid materials in the bowels, generated there, or introduced from without, &c. In England, it is said, the causes of Dysentery are the stimulating diet of the inhabitants, the bad water, the warmth of the day and the cold of the night. But Dr Walshe thinks that a *predisposition* must exist in the system for the above causes to give rise to the disease. Thus, putrid exhalations are said to cause Dysentery, as they were also held to produce typhus fever. If that were the case, medical students would undoubtedly be liable to it; yet we find them only liable to occasional Diarrhœa, and not to Dysentery. With regard to the notion that malaria causes Dysentery, the following explanation may be offered. The malaria causes *ague*, in which the internal organs are congested, especially the spleen. Now, if the spleen is congested, the splenic vein will be so, and the parts, too, fed by its tributary branches, viz., the inferior and superior mesenteric veins, which return the blood from the large and small intestines; and we know that a part labouring under congestion lies open to the inroads of inflammation and its consequences, ulceration, &c. In this indirect way, we may say that malaria causes Dysentery. Perhaps sometimes the malarious poison also acts on the blood, and thus causes Dysentery. But we often find people affected with *ague* who have no Dysentery, and *vice versâ*, proving that malaria is not a constant (if ever) cause of Dysentery.

Dr James Johnson attributes Dysentery to a derangement of the functions of the skin and liver. Perspiration, he says, is

stopped, more blood is, therefore, sent to the internal organs; hence "plethora of the coeliac and mesenteric circles, and febrile symptoms commence." Perspiration being stopped, a vicarious discharge of *mucus* and *acid* serum is thrown out upon the internal surface of the intestines, which, by this time, is in a state of irritability; hence uneasiness in the bowels, frequent desires to go to stool, and mucous discharges, &c. But how does Dr Johnson know that the *serum* effused is *acid*? It is a mere assumption on his part. He next goes on to say:—"Nature attempts a cure by perspiration, but this is partial and ill-conditioned, and by the secretion of *bile*, but this is *vitiating*, and causes contortion of the intestine, and tenesmus, and tormina." Neither does Dr Johnson state by what test the vitiated or acid condition of the bile is made manifest. But let us admit that it is so, how *does* it happen that the irritating bile spares the long tract of the small intestines (as we have shown to be the case in the anatomical characters), and limits its injurious effects only to the large bowel; nay, in the greater number of cases, to its *solitary follicles*, at first? Again, what produces the morbid alterations met with in Dysentery, when no *bile* passes into the intestinal tube? For Drs Balfour, Copland, and Parkes, agree in stating that this is observed sometimes; and the latter says:—"At any rate, it is very evident that in *many* cases of Dysentery the secreting function of the liver is temporarily suspended, as *no bile* passes by the stools, and none is taken into circulation, otherwise it would be denoted by icterus." But what is still more subversive of Dr Johnson's hypothesis, is the following quotation from Dr Parkes:—"In some cases, in which the secretion does appear to be *irritating*, viz., by producing excoriation round the anus, and scalding the patient when he goes to stool, the *mucous membrane of the colon*, previously *ulcerated* in an antecedent attack of Dysentery, has been found by me *healing rapidly*."

Besides, Dysentery is also seen simultaneously with disease of the spleen, which does not pour out any irritating secretion. I, therefore, reject Dr Johnson's opinion. I cannot help thinking, too, that if bad wine, cider, unripe fruit, &c., can produce Dysentery, substances more irritating still will also do so; but we do not find this to be the case. Thus, sulphate of copper, in a poisonous dose, produces *inflammation*, and sometimes perforation of the small intestine, and gives rise to *Diarrhoea*, not to Dysen-

tery. And we know that, in pure uncomplicated Dysentery, the small intestines are never affected (Parkes), and that the stress of the disease falls upon the large intestine. Tartar emetic, in an over-dose, causes inflammation *throughout* the intestinal canal, and does not give rise to Dysentery. Among the vegetable *irritants* may be mentioned aloes, colocynth, gamboge, jalap, scammony, &c. as the most active. When either of the two first are taken poisonously, "the most prominent symptom is excessive *Diarrhoea*, with the discharge of an excessive quantity of mucus. On a *post-mortem* examination, "the mucous membrane of the *small* intestine was *injected* and *softened*, and there was the appearance of effused lymph upon it." *

We find nothing here, either in the symptoms or *post-mortem* changes, similar to those produced by Dysentery. We may also safely conclude, I think, that the symptoms and morbid alterations produced by gamboge, jalap, scammony, &c., are nearly the same as the preceding. Even croton oil, that most powerful irritant purgative, produces, "in a large dose, severe *diarrhoea*" only; and no mention is made by Dr Taylor of the changes produced in the intestines, which could not, therefore, have been important. There are, however, *two* substances, so far as I know, which give rise to symptoms similar to those of Dysentery; but on examining the dead body, we find changes different from those of the disease: I mean *corrosive sublimate* and *cantharides*. The first, when taken in a poisonous dose, produces *diarrhoea*. "If the individual should survive several days, they (symptoms) are more like those of *Dysentery*, *tenesmus* and *mucous discharges mixed with blood being very frequently observed*."† There is no denying that these resemble the symptoms of the disease; but on a *post-mortem* examination, we find the following alterations:‡
 . "The coats of the stomach are sometimes corroded, and so much softened that they cannot be removed from the body without laceration. *Similar appearances have been met with in the small and large intestines, especially the cæcum*." In a case of Dr Herapath "the *cæcum* had been the seat of the *most violent inflammation*, the whole surface being of a deep black-red colour, and there were patches of sloughing in the coats." We shall find

* Taylor's Medical Jurisprudence, p. 130.

† Idem, p. 89.

‡ Idem, p. 94.

nearly the same account given of poisoning by cantharides—*diarrhœa* supervenes, but this is not always observed; the matters discharged from the bowels are *mixed with blood and mucus*,” p. 135. On inspecting the body after death, it was found that “*the whole of the alimentary canal, from the mouth downwards, was in a state of inflammation*,” p. 135. We, therefore, find that, if the symptoms produced by poisonous doses of corrosive sublimate and cantharides are similar to those of Dysentery, there is a wide difference in the morbid alterations observed after death. Thus in the case of poisoning by these substances, the *whole* of the mucous membrane of the small and large intestines was *inflamed* and sometimes corroded; whereas in the disease, when uncomplicated, the morbid changes are limited to the *large* intestine; and not only to it, but to a *part* or element of it, at first, to the *solitary glands*! Besides, in Dysentery, apart from *ulceration*, we often find very little trace of *inflammation* in it on death.

Will it be said that bad wine, water, fruit, improper articles of diet, &c., act differently from all the substances above quoted? Is it that they produce Dysentery, not by mechanically irritating the mucous membrane, but by generating a poison or morbid agent in the alimentary canal, which is absorbed into the system? We may perhaps elucidate the point by studying the cases of disease caused by “poisonous food.” Thus muscles, fish, cheese, German sausages, pork, bacon, &c. &c. sometimes give rise to symptoms of *irritant* poisoning; but the symptoms are the following:—“The symptoms are sometimes accompanied by vomiting, colic, and diarrhœa.” On a *post-mortem* examination “no appearance was found to account for death.”* Here also we find no symptoms or morbid changes like those of Dysentery.

But, let us admit for a moment, that acrid ingesta may cause true Dysentery; we shall ask next, why they limit their injurious influence to the *solitary glands* of the large intestine? Why do they spare the mucous membrane of the small intestines, and that also (in the great majority of uncomplicated cases) of the large intestine, which intervenes between the solitary glands?

I am, therefore, inclined to think that all acrid or acid ingesta do not produce Dysentery by acting *mechanically*, and that vicissitudes of weather only play the part of *predisposing* causes of Dysentery. The true *exciting* cause of the disease lies beyond this.

* Dr Taylor—Medical Jurisprudence, p. 140.

It may be produced by some blood changes, as the occasional coexistence of scurvy seems to point out, or sometimes to an epidemic constitution; but what those changes in the vital fluid, and that condition in the atmosphere, are, no one, I conceive, yet knows. May it not be, that when Dysentery is sporadic, it is the result of blood changes, and when epidemic, of atmospheric constitution? Upon the whole, it seems that Dysentery finds its most efficient causes in the tropics, for it is there that it is so rife, and puts on so severe a form. What, can, then be the reason of the prevalence of the disease there? We find in those countries *great heat, moisture, and malaria in abundance*. Is the disease, therefore, owing to a malarious poison, but different from that of continued fever, and of any other? If so, how is the occurrence of Dysentery to be accounted for in Europe, where malaria certainly is not rife, and especially on board ship, where *no malaria* can be in operation? I confess that the explanation is very difficult.

Pathology.—However produced, whether introduced into the system from without, or generated in it by some unaccountable process, it would seem that the poison or morbid agent which causes Dysentery has a tendency to be eliminated by the *solitary glands of the large intestine*. Thus, I conceive, it is attracted by them or determines to them (why, I know not) to be eliminated from the body; and, in that salutary process, causes inflammation and ulceration of them; just as the poison of continued fever is attracted chiefly to *Peyer's patches, and also in a small degree, to the solitary glands of the small intestines*, and causes them to inflame and ulcerate in the process of elimination.

But in Dysentery the glandular alterations are more constant than in typhoid fever. This, however, is merely a speculation on my part, and I give it only for such. That there is a connexion between the *skin* and the *mucous membrane* of the alimentary canal, cannot be doubted. Thus, certain articles of diet taken into the stomach produces an affection of the skin, *ex gr. urticaria*; and certain injuries sustained by the tegumentary system produce disease of the mucous membrane of the digestive canal. Thus I find the following passage in Druitt, "Moreover, it has been shown by Mr Curling, that severe burns in young people are sometimes followed by an *acute ulceration of the duodenum*, commencing probably in BRUNNER'S GLANDS, and liable to terminate fatally, by perforating the intestine.

The cause of these visceral affections is supposed to be the cessation of the exhalent function of the injured portion of skin; but this explanation adds to the obscurity.*

Dr. Parkes makes the following statement. "If, as I have reason to believe, the doctrine of increased action of the liver be erroneous, the effects of heat are to diminish all the secretions, except that of the skin. We can, then, easily conceive, that as the cutaneous excretion plays a more important part than in colder climates, so alterations in it are followed by graver consequences. *Why these consequences should implicate the colon so particularly, is at present impossible to determine.*"

Question of Contagion:—Ballingall, Bampfield, Dr. James Johnson, Dr. Parkes, &c., state that Dysentery is not contagious. Some authors, however, maintain that when patients labouring under Dysentery, are huddled together, the disease may become truly infectious. But it is asserted, on the other hand, that under these circumstances, *typhus fever* is associated with the Dysentery, and is the true cause of the infection. Yet, Dr. Copland asks, why under these circumstances, *the disease communicated is always Dysentery and not fever alone?* Other authors state, that it is the noxious exhalations arising from the excretions of the sick, that infect the others. Dr. Alison says, "*there is no good ground for doubting, that in certain circumstances, it may spread by contagion.*"

I now ask, since this is the case, whether Dysentery is *simply* the result of vicissitudes of weather? What other instance is there of an *inflammation, caused merely by cold or atmospheric changes, being contagious?* I conclude, therefore, that the cause of Dysentery, is (in certain circumstances, at all events), *specific*. New comers are more liable to be attacked by Dysentery; and both sexes are equally subject to it.

Prognosis:—Sporadic Dysentery, in temperate climates, and in persons of good constitution, is not often fatal, even in India; under similar circumstances, European soldiers are not cut off more than *three per cent*. But when the disease is epidemic, and in hot climates, it destroys life as extensively as Asiatic Cholera. The favorable signs are a diminution of the pain, tormina, tenesmus,

* The Surgeon's Vade Mecum, p. 135.

and tenderness, of the number of stools, which also become changed in their character, the blood and pus disappearing from them, and their feculent nature re-appearing.

The unfavorable signs, are a cessation of the pain, without a change in the character of the stools, especially if adynamic symptoms are present; protraction of the disease beyond ten days, and great extent of surface implicated; and, also, extremely fetid stools, weak pulse, and hiccup.

TREATMENT

1. Of acute sthenic Dysentery:—The most rational plan of treatment seems to be the following, which is, in particular, sanctioned by Dr Parkes. If the case be seen early, as within the first few hours, venæsection is advisable, and is very beneficial. It must be repeated, if after some time, there are still much pain or tenderness of the abdomen and fever, or if the stools are not improved in character. Some authors state, that bleeding is not advisable, even if the case be *sthenic*, if the stools are like the washings of putrid meat. If venæsection is not deemed advisable, then it will be necessary to leech the iliac fossa, or over the sigmoid flexure, or the transverse colon, and the number of leeches may vary from *ten* to *twenty*, according to the urgency of the case. Also, if, after venæsection has been employed, there is still a little pain or tenderness of the abdomen, and it is thought fit not to bleed generally, leeches may be had recourse to, applied to the painful spot. If there is much tenesmus, leeching the anus, or along the curve of the sacrum, (as advised by Dr Copland), is very good, and gives great relief. The leeches may be applied two or three times in the day, if the disease is violent; and, in India, this practice is carried on for *seven* days, sometimes, and with benefit, according to Dr. Parkes. It is the character of the stools, especially, which directs us in repeating blood-letting; namely, if they contain much blood, and are scanty, and do not assume the feculent appearance after the first bleeding.

Next, I would give calomel combined with opium, as two or in three grains of the former, and one of the latter, in a pill; and half-an-hour after, I would prescribe some castor oil and laudanum, to purge, and, at the same time, soothe the irritated bowels. This anodyne purgative causes great relief to the patient—Purgatives are considered by some authors, to be exceedingly useful; especially, when the Dysentery is sudden in its attack, and

preceded by constipation. Thus Dr. Cheyne of Dublin, gave full doses of bitartrate of potash; others administered sulphate of magnesia (Rowland's); some practitioners gave from half to one drachm of ipecacuanha; and Mr Twining exhibited from four to eight grains of ipecacuanha, and alternated this with large doses of jalap. But I cannot help thinking that the ulcerated state of the bowels must be greatly irritated by such drastic purgatives; and I am of opinion that castor oil and laudanum are more eligible than the other substances I have mentioned, in the disease under consideration. As soon as the bowels have been moved, it is a good plan to give a pill composed of two grains of pil. hydrargyri, one quarter of a grain of opium, and half or one grain of ipecacuan; and to repeat it every five hours. Or, instead of this, some persons prefer giving two grains of hydrargyrum cum cretâ, and five grains of Dover's powder.

Now an important question arises: should we give mercury to *salivate* the patient? Dr. Parkes draws the following conclusions from his experience in India:—1. In a certain number of cases of acute Dysentery ptyalism gave great relief. 2. In some others none at all. 3. In a third class of cases, ptyalism cannot be produced. 4. In a fourth class, it is uncontrollable when produced, and affects the general health subsequently. 5. In adynamic and malignant Dysentery, salivation is absolutely contra-indicted. 6. In the purpuric or scorbutic variety of the disease, it is injurious. 7. Where the cure seemed to be effected by salivation, convalescence was more protracted than when the treatment had been mainly depletory. 8. When there was hepatic abscess or tendency thereto, there was no evidence that mercury is more particularly required. Lastly, he comes to the conclusion that the notion of curing Dysentery by mercury must be relinquished. In mild cases of Dysentery, nitric and nitro-muriatic acid, and also, purgatives are good, Lemon juice and vinegar are said to be very useful, when the evacuations from the bowels are highly alkaline.

When fever is present, tartar emetic administered as a lowering agent and diaphoretic is good.* Then, too, squills are good

* It is well known that this substance tends to produce inflammation of the mucous membrane of the alimentary canal; but Dr. Parkes states that, in minute doses, its action does not extend beyond the stomach and duodenum. But may it not cause *irritation*, if not *inflammation*, of the lower tract of the mucous membrane?

as an adjuvant ; but must occupy a secondary place in the treatment. If at the outset of the disease, the stomach is loaded, then I would consider it well to give an emetic.

Acetate of lead is a valuable remedy when the bleeding from the bowels is considerable, and the more acute symptoms have subsided. It may be given (by the mouth) to the extent even of *five* grains every third or fourth hour. Balsam of copaiba and oil of turpentine, in combination with laudanum, are also stated to be good under those circumstances.

LOCAL TREATMENT.

Large emollient enemata of marsh mallow, linseed tea, melted butter, olive oil, &c., produce great relief and may be employed : or else, small opiate enemata, consisting, for instance, of two or three ounces of warm gruel, and half or one drachm of laudanum. If the blood in the stools be considerable in amount, I would give an enema of cold water, containing from fifteen to twenty grains of acetate of lead ; and this may be repeated every four hours, if necessary. Some authors even advise to administer *one drachm* of acetate of lead in the enema ! If, however, the quantity of blood passed be trifling, a small enema of cold water is sufficient sometimes ; and according to Mr. Twining, relieves the vesical irritation as well. Injections composed of infusion of ipecacuanha or tobacco have been recommended ; but I confess my unwillingness to try such potent and dangerous agents. Opiate suppositories are advised for the tenesmus ; but I should think that the irritability of the rectum would render their use unpleasant, if not intolerable. Instead of them, it would be better, I conceive, to give a small enema composed of one drachm of laudanum and two ounces of cold water ; or to apply a belladonna plaster to the sacrum, as practised by Dr. Copland. Mr. Twining speaks very favourably of the former plan. Warm or vapour baths are very good ; but if they cannot be procured, hot fomentations or warm soft poultices applied to the abdomen, and constantly renewed, are very grateful to the feelings of the patient. When the Dysentery lapses into a flux, then I would give opium with catechu, kino, acetate of lead or zinc, by the mouth, and order clysters containing sulphate of zinc and laudanum.

It is to be understood that the above grand antiphlogistic remedies are only to be used in a severe case of Dysentery : in mild cases, a few leeches, or blisters, over one or the other iliac fossa, according to the seat of the pain or tenderness, and

dressed with morphia, are sufficient to relieve the inflammation, whilst the pills above mentioned, and castor oil and laudanum are taken internally.

But one of the most important points, is to pay the strictest attention to the *diet* of the patient. The large bowel which is the principal seat of the disease, must be kept as empty as possible, whilst in an irritable state. We must, therefore, order barley water or very thin sago, in cupfuls every sixth hour or so; and in the interval very little fluid must be allowed. By following such a plan, the food will probably be all absorbed before it reaches the large intestine. We must also use great caution in allowing the patient to return to his usual food; as errors in diet are the most common causes of relapse. The patient, too, must be confined to the recumbent posture, as faintness might ensue if he rose, from the active depletion used, and the small amount of food allowed him, coupled with the effects of the disease.

2. Of asthenic Dysentery (acute):—If the prostration of the patient is not excessive, when he is seen, I would apply a few leeches to the abdomen, if rendered necessary, by the symptoms which have been already described, and afterwards a warm turpentine epithem, to be renewed frequently. In all cases of asthenic Dysentery, I would not bleed at the arm, “especially when the disease is epidemic and in moist seasons.” (Copland)—I would next administer a pill composed of calomel, ipecacuan and opium, to be followed, after a few hours, by castor oil and laudanum, and emollient or opiate enemata, if tenesmus is present.

An emetic of ipecacuanha, at the outset, may be useful, if indicated by the state of the digestive organs. If these remedies do not subdue the disease; it is necessary to administer full doses of camphor in combination with opium, Dover’s powder or hop, every five or six hours.

If the disease is likely to become protracted, occasional purgatives of castor oil and turpentine, floating on milk or aromatic water, are good; and in a more advanced stage still, bitter tonics and astringents are most servicable. If the debility of the patient, however, be extreme, blood-letting in any way is, I think, contra-indicated; and camphor, with hydrargyrum cum cretâ, ipecacuan and opium are our main resources. At the same time, warm turpentine epithems should be constantly applied, till relief is obtained. Decoction of cinchona or serpentaria with camphor

or chlorate of potash, should also, according to Dr. Copland, be exhibited to the patient; and if the evacuations are copious, opium and astringents should be resorted to, with injections of alum. In conclusion, I will quote Dr. Parkes' opinion: "In the adynamic form, in natives or Europeans, alum, combined with catechu and camphor is the best treatment, with small doses of Dover's powder in the intervals, frequently repeated."

COMPLICATIONS OF DYSENTERY.

The complications of Dysentery are suppurative hepatitis, scurvy or purpura, simple remittent, regular or irregular intermittent, fever, typhus, cholera, rheumatism, gastro-enteritis, &c. We shall say a few words only of the following:—

HEPATITIS COMPLICATING DYSENTERY.

Hepatitis may precede or follow the occurrence of Dysentery: when it precedes the occurrence of the latter, the question has been raised, whether it is it that produces the Dysentery. According to my humble opinion, the answer should be in the negative, as I have partly shown in combating Dr. J. Johnson's opinion; since hepatitis frequently exists without giving rise to Dysentery, and that the latter may be cured before its presumed cause is removed; which it would be absurd to suppose. But hepatitis may come on after the accession of Dysentery, and make its appearance during the course of the latter, or when it is partially cured. Again, in this case, I deny that the disease of the liver is derived from that of the bowels; since "Dysentery is observed to be *very frequent* and very fatal among the the natives of Bengal, while *affections of the liver are exceedingly rare* among these people."—(Twining).

Besides, if suppurative hepatitis is owing to absorption of pus, "or some vitiating ingredient," (Watson), from the ulcers of the large intestine, as maintained by Dr Budd, how is it that we do not *invariably* meet with hepatic disease when Dysentery is present? Since the cause, according to this view, is in operation, we should see the effect of it; yet Dr Parkes proves that ulcers may be present in the large bowel, and no abscess be found in the liver! Also, if the suppurative hepatitis results from absorption of unhealthy matter from the ulcerated intestines, we doubtless ought to have *suppuration* of the mesenteric glands in all cases of Dysentery; yet we find them merely enlarged and inflamed; and Dr Parkes says, "I never saw suppuration of them

in *secondary hepatic abscess!*" The same author also states, that the affection of the liver is not produced by *venous* inflammation in *many* cases.

One is led to ask, why in ulceration of the small intestines produced by typhoid fever, or phthisis, or external burns or scalds, or in the simple chronic ulcer of the stomach, there is no disease of the liver? Dr Budd makes the statement that Dysentery always precedes suppurative hepatitis; and this is necessary to his hypothesis concerning the manner of production of the latter disease. But Dr Copland, on the other hand, observes, "that inflammation of the liver occurs, either previously to, coetaneously with, or consecutively on, the dysenteric affection;" and Mr Annesley speaks of "Dysentery supervening to disease of the liver," and "when the affection of the liver supervenes to Dysentery."—(Parkes.) What, then, produces the disease of the liver, I may ask, when the Dysentery is absent, and *no ulcers*, therefore, are to be found in the large intestine? According to Dr Budd's view, there should be no suppurative hepatitis in that case.

I therefore consider, that the hepatic disease is produced by the vicissitudes of weather, during which Dysentery commonly arises, and that it has no necessary connection with the latter.

The affection of the liver may be declared or latent, and its symptoms will vary accordingly; but we shall not describe them, and merely add, that the treatment is the same as that of Dysentery, with a few additions.

SCORBUTIC DYSENTERY.

In this form of the disease, the morbid alterations are not confined to the large intestine, but the small intestines are also affected—the mucous membrane being congested and dark, especially that of the ilium. We also meet more frequently with perforation of the bowels, and sometimes find general gastro-enteritis and ulceration of Peyer's patches, and of the solitary follicles of the small intestines. There may also be ecchymosis of the mucous membrane. Tormina and tenderness, on pressure, may be absent; but tenesmus is generally urgent. The stools contain dark blood; and in an advanced stage are very fetid.

Treatment.—Topical depletion by leeches, if indicated by the nature of the stools, and the exhibition of blue pill and ipecacuan with nitric acid, warm bath and opiate enemata to relieve the

tenesmus. The diet must, in addition to farinacea, consist of vegetables and lemonades. (Parkes.) If, after a week or thereabouts, the acute character of the disease subsides, then creosote should be immediately exhibited to the patient, and may be gradually pushed to fifteen or more minims.

DYSENTERY WITH REMITTENT FEVER.

The fever may be regular or irregular, and does not appear to be in the least affected by the Dysentery; whereas the latter always assumes the asthenic form. If the ague be regular, the stools are numerous and copious; if irregular, "there is only, generally, watery diarrhoea." (Parkes.)

The *treatment* is said to be easy; leeching the abdomen freely, and administering quinine, opium, and astringents, combined together, with leeches to the anus, and enemata of acetate of lead or opium, to alleviate the tenesmus, is the best plan.

BILIOUS REMITTENT FEVER AND DYSENTERY.

There is pain over the hepatic region, headache, &c., in addition to the other symptoms of Dysentery, as bloody stools, tormina, tenesmus, &c.

Treatment.—Leech freely the region of the liver and the other seats of pain of the abdomen, and give quinine, blue pill, and opium.

In both these cases of fever complicating Dysentery, the principal point is to subdue the fever, by giving quinine rapidly at the beginning of the disease.

CHRONIC DYSENTERY

May begin as such from the beginning, or may be the termination of an acute attack. We have already described its anatomical characters; we need not, therefore, repeat them under this head.

Symptoms.—They are essentially the same as those of the acute form; varying only in their minor intensity. The constitution, however, suffers very severely sometimes from the protraction of the disease, especially if there is great extent of intestines implicated. Emaciation, pallor, and hectic fever come on; the patient gets more and more enfeebled, until at last death happens.

Prognosis.—This depends upon the length of time that the disease has endured. Thus, if recent, the lymph which has been profusely poured out upon and between the coats of the large intestine will be re-absorbed by the treatment; but if the disease

has been protracted, this salutary effect can hardly be accomplished, and many other complications are then also apt to come on, especially disease of the liver or pancreas.

Treatment.—If any exacerbation be present, it will be our duty to employ topical blood-letting, by leeches applied to the painful spot. Mercury will also be advisable, to remove the coagulable lymph of which we have spoken; but it must not be pushed so far as to produce ptyalism. It may be given in the form of calomel or blue pill, in combination with ipecacuanha, gentian, and taraxacum; or, what is better still, corrosive sublimate (from one-twelfth to one-sixth of a grain), in decoction of bark, may be administered three times a-day. Dover's powder, occasionally at night, may be very serviceable, especially if there is pain or insomnia. At the same time flying blisters, or mercurial or ioduretted liniments, applied to the abdomen, may hasten the cure. Later on in the disease, when the more acute symptoms have subsided, nitrate of silver will prove of signal importance, given by the mouth, in the dose of one-sixth to one-half of a grain, in dilute nitric acid, and in an enema containing two or three grains of it. It acts as a tonic and astringent. Also, nitro-muriatic acid is very highly spoken of by the practitioners of India, particularly in the case of natives. Five minims of it may be taken internally *ter die*; and it may also be employed as a lotion applied to the abdomen and hepatic region (if the liver be diseased); or a warm bath, containing an ounce of the acid to the gallon of water, may be taken. When the constitution of the patient has been shattered by the ravages of the disease, then it becomes advisable to give sulphate of copper, zinc, or iron, internally. During convalescence, bitter tonics, change of air, and especially removal to a temperate climate; a strictly farinaceous diet should be recommended, and no beer or spirit be allowed, or only very little sherry or sound brandy. The return to animal food must be very cautious and gradual.

N.B.—Dysentery, in the dark races, requires the same treatment; ipecacuanha being particularly beneficial to them.

I have inadvertently omitted to speak of the Diagnosis of Dysentery; but this is generally very easy, and by collating all the symptoms, the nature of the disease is known at once.

Dr Burnett

with Dr Robert M. L. Linnell, comp

RESEARCHES,

&c. &c.



